Portland Harbor

CLEANUP NEWSLETTER *Spring 2005*

The U.S. Environmental Protection Agency (EPA) added Portland Harbor to its National Priorities List of contaminated sites in December 2000, because river sediments are contaminated with metals, pesticides, polychlorinated biphenyls (PCBs) and petroleum products. This newsletter presents current information from the ongoing Remedial Investigation and Feasibility Study (RI/FS) and provides a progress update on in-water early removal actions, upland investigations, and source control work.

SAMPLES PROVIDE VALUABLE INFORMATION

A first round of field sampling for the Portland Harbor Superfund site was completed from 2001 through 2004. A second round began last fall. Sampling data provide valuable information about the bottom, banks, water and aquatic life of the Willamette River.

This information is being gathered by the Lower Willamette Group, under EPA oversight, as part of the site Remedial Investigation and Feasibility Study (RI/FS). The Group includes the Port of Portland, the City, and some private businesses along the river. The goal of the RI/FS is to understand the level of contamination in Portland Harbor and how it can affect people and the environment. Sampling results point us toward what is needed to clean up the site.

Round 1 Sampling Looked at Fish, River Structure

The first round of data was collected from 2001 through 2004 to study the effects of contamination on fish in the Willamette. Data also provided better understanding of the river's physical structure.

Tissue samples were taken from fish and shellfish species in Portland Harbor, including sub-yearling Chinook salmon, brown bullhead, black crappie, large scale sucker, northern pike-minnow, peamouth, sculpin, small mouth bass, carp, clam and crayfish.

Chemical analysis revealed higher metal concentrations in the clam and crayfish than in the fish. Of the fish, carp had the highest metal concentrations. Pesticides such as DDT were found frequently in many of the species sampled, and persistent bioaccumulative toxics (PBTs) were found in all species. Levels of other contaminants varied more because they depend on the feeding habits of each organism and its position in the food chain.

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Also In This Issue

Round 1 Sampling *(continued)*

Activities completed to understand the physical dynamics of the river include bathymetry (underwater mapping of the river bottom), sediment-stake monitoring and sediment-profile imaging.

Four separate bathymetric surveys were conducted between January 2002 and February 2004. These surveys resulted in three-dimensional underwater maps of the river bottom, and provided information on how the river bottom changes over time.

Sediment stakes were placed in the river at eight locations to measure changes in sediment depth over time. These measurements will help provide an understanding of where sediment erodes and accumulates, and how it moves along the river's shore.

Surveys of the speed and direction of the water current were taken along 16 cross-sections of the river during three sampling events between April 2002 and January 2004.

River sediment core sample.

Detailed information on all of these sampling events is available in the "**Round 1 Site Characterization Summary Report**" from EPA. Contact **Judy Smith** at (503) 326-6994 or see EPA's technical documents page of the Portland Harbor website: www.yosemite.epa.gov/R10/CLEANUP.NSF/sites/ptldharbor.

ROUND 2 SAMPLING ASSESSED BEACHES, RIVER SEDIMENT AND WATER

Between July and November 2004, a second round of sampling was begun to assess beach sediment, surface and subsurface river-bottom sediment, surface water, and groundwater. This sampling was designed to answer bigger questions about the kind of chemical and toxic contamination that exists in Portland Harbor, how much there is, and where it is located. More "Round 2B" sampling is planned to complete these studies as part of the RI/FS work.

Surface-Water Samples Taken March 2005

Surface-water samples were collected at 23 different stations in the river during the first two weeks of March. These samples are being analyzed for contaminants such as metals, herbicides, butylins, and semi-volatile organic compounds.

UPCOMING SAMPLING ACTIVITIES

Fall Chinook Sampling Scheduled for Early May 2005

In March, field crews completed a day of reconnaissance for the presence of fall sub-yearling Chinook. They also scheduled fish sample collection for the first part of May.

Benthic Sledge Pilot Survey

Later this spring, field crews will collect samples of benthic organisms, those that live on the river bottom, using a sledge dragged behind a boat to skim samples from the top layer of sediment. This method of sample collection will be evaluated before it is used on a large scale.

Groundwater Pilot Study Nearly Complete

Part of the Round 2 sampling effort focuses on the movement of water underground, through soils and sediments surrounding Portland Harbor. This "groundwater" typically flows toward and into the Willamette River, and may carry with it a variety of chemicals and toxic pollutants. It is important to understand groundwater as a source of contamination to the river, but since it moves underground, it is more difficult to study than surface water.

The Lower Willamette Group is now completing a pilot study to learn more about groundwater "pathways" to the river. The pilot study evaluates different sampling approaches where groundwater enters the river system. Information from this pilot will help us understand contaminant levels in an important area of the riverbed called the "transition zone."

The transition zone is where groundwater comes up through bottom sediments to mix with river water. It is an area of high biological activity, where microscopic organisms live and chemical processes occur that can change the properties of pollutants and toxic contaminants. Worms, clams and insects live in the transition zone. They can take in contaminants and later transfer them to larger organisms higher in the food chain, including birds, fish and people. The groundwater pathway pilot study will give us needed information to conduct a larger groundwater evaluation throughout the Portland Harbor area, adding critical information to the RI/FS process.

For more information, see the **"Groundwater Pathway Assessment Pilot Study Field Sampling Plan and Quality Assurance Project Plan,"** available on the technical documents page of the EPA website or by contacting **Judy Smith**.

EARLY ACTION UPDATES

"Early actions" are cleanup projects within the Portland Harbor Superfund site that can be done on a faster schedule, before the RI/FS is completed. Early actions allow responsible parties to clean up contaminated areas before final decisions are made on cleaning up the entire Superfund site. This reduces the risks to people and the environment more quickly and efficiently. Two Early Actions are now under way in Portland Harbor—at the Port of Portland's Marine Terminal 4 and at the former GASCO site. A third early action is anticipated at the Arkema (formerly Atofina) site.

EPA to Seek Comments on Terminal 4 Early Action

Over the past year, the Port of Portland has been studying the nature and extent of sediment contamination at their Marine Terminal 4 (T4), on the east bank of the Willamette River just north of the St. Johns Bridge. The T4 Early Action project extends from the north end of Slip 1 to the edge of Slip 3. It includes sediments from the ordinary high-water line of the river bank to the edge of the navigation channel. Petroleum products, metals, pesticides and polychlorinated biphenyls (PCBs) contaminate the area.

The Port is now finalizing an Engineering Evaluation and Cost Analysis (EE/CA) that outlines potential cleanup methods for contaminated sediments at T4. Possible methods are capping, dredging, on-site confined disposal, monitored natural recovery, and other treatment technologies. Over the last few months, as part of developing the EE/CA, the Port met with various community groups, neighborhood associations and interested individuals to receive feedback on cleanup options.

Late in May, the EE/CA will be available for public review and comment. For more information, see EPA's Portland Harbor website www.yosemite.epa.gov/R10/CLEANUP.NSF/sites/T4 and the Port of Portland T4 project website http://www.pdxnoise.com/T4_EA_Home.aspx.

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Early Action Updates *(continued)*

Schedule Delayed for GASCO Tar Removal, Seeking Comments this Spring

Last year, EPA and Northwest Natural Gas signed an agreement to remove a large tar and oil deposit in the Willamette River next to the 35-acre GASCO site on NW St. Helens Road. GASCO operated an oil-gasification plant from 1913 to 1956, discharging a large amount of waste water, tar-oil and other contaminated materials to the river and adjacent lands.

The Early Action removal was initially designated as "time critical" and scheduled to occur this past winter. Since then, Northwest Natural has encountered a number of technical and planning issues that have set back their cleanup schedule. EPA now expects that removal work may begin this summer. This Early Action, now designated as "non-time critical" under federal guidelines, will have a larger public involvement and decision-making process. Northwest Natural is now finalizing an EE/CA describing possible cleanup approaches for the site. EPA plans to invitet public comment on the recommended alternative when the draft EE/CA is ready this spring. For more information, see EPA's Portland Harbor website.

Arkema Making Plans for Early Action

Arkema (formerly called ATOFINA Chemicals, Inc., Elf Atochem and Pennwalt) is finalizing an agreement with EPA to define the boundaries of an Early Action and to develop an EE/CA outlining clean up options for contamination in the river. Between 1941 and 2001, a wide variety of chemicals were produced at the facility, located at 6400 NW Front Avenue. More information on this site will be provided in the next newsletter.

ACTIONS TAKEN TO CONTROL POLLUTION SOURCES

EPA is the lead agency overseeing the Lower Willamette Group in completing the RI/FS for Portland Harbor. This is the "in-water" portion of the project that focuses on the river and river sediment. The Oregon Department of Environmental Quality (DEQ) is the lead agency overseeing individual responsible parties who own or operate sites next to or near the Harbor. This "upland" portion of the project focuses on identifying, evaluating and controlling sources of contamination that could move into the river. Currently, DEQ and EPA are drafting a "**Joint Source Control Strategy**" that describes how to evaluate upland contamination sources.

DEQ expects to have a draft strategy available for public comment soon and will finalize the strategy this summer. It will provide guidance for DEQ project managers and responsible parties in controlling pollution sources, or taking "source control actions." For more information contact **Mikell O'Mealy** at (503) 229-6590.

Gunderson Takes Interim Source Control Measures

Gunderson, Inc., at 4350 NW Front Avenue, is taking interim source-control actions to prevent contaminated groundwater from migrating toward the Willamette River. Ground-water beneath the north end of the facility was contaminated in 1980 when a dip tank containing industrial solvents was punctured. These solvents, known as volatile organic compounds (VOCs), are being cleaned up in two stages.

Last November, Gunderson began pumping and treating the contaminated groundwater between the dip tank and the river. In the second stage, Gunderson is constructing an air-sparging system to aerate groundwater, and a vapor-extraction system to capture contaminants. The VOCs will then be removed from the soil vapor using a carbon filter. This interim source control action is part of the RI/FS for the Gunderson site. Once the RI/FS is

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Gunderson Source Control Measures *(cont.)*

completed, DEQ will select a final remedy for the cleanup. For more information, contact **Dana Bayuk**, DEQ Project Manager, at (503) 229-5543 or bayuk.dana@deq.state.or.us.

Cleanup at McCormick and Baxter Moves Forward

Late last year, a 23-acre sand cap was constructed over contaminated sediments in the Willamette River at the McCormick & Baxter Superfund site. The cap consisted of 1.2 million pounds of oil-absorbing clay placed over creosote seeps, and 130,000 tons of sand over the remaining contamination. The clay and sand were protected against erosion by the river with a combination of rock and concrete-block mats. They were covered with a thin layer of sand to help reestablish fish habitat. Some 5.5 acres of riverbank were stabilized with two feet of topsoil and planted with native grasses. Native trees and shrubs will be planted in 2006. DEQ is looking for volunteer groups to help with the planting—for more information, please contact **Mikell O'Mealy** .

Cleanup under way at McCormick and Baxter site.

The cleanup also included removal of 1,600 broken pilings, a wooden dock remnant, a partially submerged wooden barge and concrete debris. Later this year, DEQ will cap the remaining one acre of contaminated sediments following work by the City of Portland to stabilize bedding along a high-pressure sewer main.

McCormick & Baxter Cleanup *(continued)*

This spring and summer, a 43-acre cap will be constructed on the "upland" part of the site next to the riverbank. Fifteen acres of this cap will be a liner and drainage system to keep rainwater out of the main contamination source area. That area is encircled by an underground barrier wall built in 2003 to keep creosote from moving into the Willamette River.

In addition, DEQ is updating the hydro-geologic Conceptual Site Model (CSM) for the McCormick and Baxter site. The model contains the latest information about geology and contaminant distribution and movement. The CSM will focus on Non Aqueous Phase Liquid (NAPL), including its potential movement from within the barrier wall to the river. NAPL is petroleum or other fluid that does not mix with water and tends to remain as a separate undissolved liquid in the subsurface. DEQ expects to complete the updated CSM this spring.

The McCormick and Baxter Creosoting Company, located at 6900 N. Edgewater Street on the east bank of the Willamette River, operated from the 1940s to 1990 as a wood-treatment facility. The site is contaminated with creosote, arsenic, dioxin and pentachlorophenol (PCP), a common wood-treating chemical. All of these are harmful to people and wildlife, and devastating to fish and fish habitat.

Updates on Other Source Control Actions

- The Port of Portland is starting the final cleanup remedy for the upland portion of **Terminal 4, Slip 3**. The remedy includes NAPL removal, bank excavation and backfill, and establishment of a groundwater monitoring program. The site is located on the east bank of the Willamette River at river mile 4.6.
- **Time Oil** is using in-situ oxidation to treat pentachlorophenol (PCP) in groundwater, in addition to an ongoing pump-and-treat groundwater system. To determine whether other source control actions are needed, Time Oil is also finishing the third phase of a remedial investigation of their bulk fuel storage areas. Time Oil is located on the east bank of the Willamette at river mile 3.5.

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Other Source Control Actions *(continued)*

- **Arco/BP Terminal 22T** is taking source control actions to pump, treat and contain groundwater to keep contaminants from moving into the river. Arco/BP is located on the west bank of the Willamette at river mile 5.3.
- Last year, the **Marine Finance** property was sold under a "prospective purchaser agreement" with DEQ. The new owner will remove selected areas of contaminated soil and will control storm water at the site. Marine Finance is located on the west bank of the Willamette at river mile 5.8.
- **Arkema (Atofina)** is operating an air-sparging and soil-vapor-extraction system to remove high levels of chlorobenzene contamination in soils and groundwater. In addition, Arkema plans to begin in-situ (in place) treatment of hexavalent chromium contaminated groundwater after public review and comment on a proposed plan. Arkema is currently finishing the remedial investigation and risk assessment. The site is located on the west bank of the Willamette at river mile 7.2.
- The **Willbridge** bulk petroleum storage facility has removed and contained contamination in groundwater and soils, and is now beginning a feasibility study to determine whether other source control actions are needed. Willbridge is located on the west bank of the Willamette at river mile 7.7.
- **Mar Com Marine** is waiting for the sale of the north parcel of the property to begin source control action. Selected measures include removal of some 20 cubic yards of sandblast grit and contaminated soil. After foreclosure earlier this year, the south parcel is under new ownership, and DEQ plans to pursue investigation and source control with the new owner. Mar Com is located on the east bank of the Willamette at river mile 5.6.

COMMUNITY INVOLVEMENT

Community Involvement Plan Update Coming Soon

The Portland Harbor Community Involvement Plan is being revised with new strategies for 2005 and current contact information for agency staff. EPA and DEQ would like to hear your thoughts on what they need to do to keep you involved and informed about Portland Harbor. The revised plan will be available on EPA's website this spring, or contact **Judy Smith** at (503) 326-6994 to receive a copy and to provide your comments.

Community Advisory Group Discusses Portland Harbor Issues

The Portland Harbor Community Advisory Group (CAG) is a coalition of dedicated volunteers who meet monthly to discuss cleanup issues and hear presentations from agencies and potentially responsible parties. CAG meetings occur on the second Wednesday of each month, and everyone is encouraged to attend. See the CAG website for more information: www.portlandharborcag.org; or call CAG Chair **Robin Plance** at (503) 240-1923.

Technical Assistance Grantee Reviews Documents

Willamette Riverkeeper is the "technical assistance grantee" for the Portland Harbor Superfund site. Under federal law, EPA can fund one technical assistance grant (TAG) for each Superfund site. TAG technical advisors can review and comment on site-related documents by or submitted to EPA throughout the remedial investigation and cleanup. For more information, contact **Travis Williams**, Willamette Riverkeeper Executive Director, at (503) 223-6418.

First Portland Harbor Field Day — Wet, but Successful!

Willamette River Cleanup Authority Update

The Willamette River Cleanup Authority met twice in 2004, on July 23 and December 16. To hear a *full-length* recording of the meetings, visit DEQ's Portland Harbor website at www.deq.state.or.us/nwr/PortlandHarbor/ph.htm. The next Authority meeting date has not yet been set.

The Willamette River Cleanup Authority was created in 2003 by the passage of Senate Bill 751. Chaired by Governor Kulongoski, the Authority included State Senators Rick Metsger and Jason Atkinson, and State Representatives Betsy Johnson and Dan Doyle. Early this year, Representative Doyle resigned from the Oregon Legislature. His replacement to the Authority has not yet been named. The purpose of the Authority is to gather reports from DEQ, EPA and potentially responsible parties about the ongoing RI/FS process, and to make recommendations to the Legislature on the need for bonds to pay for all or part of the final in-water cleanup plan.

Site Background

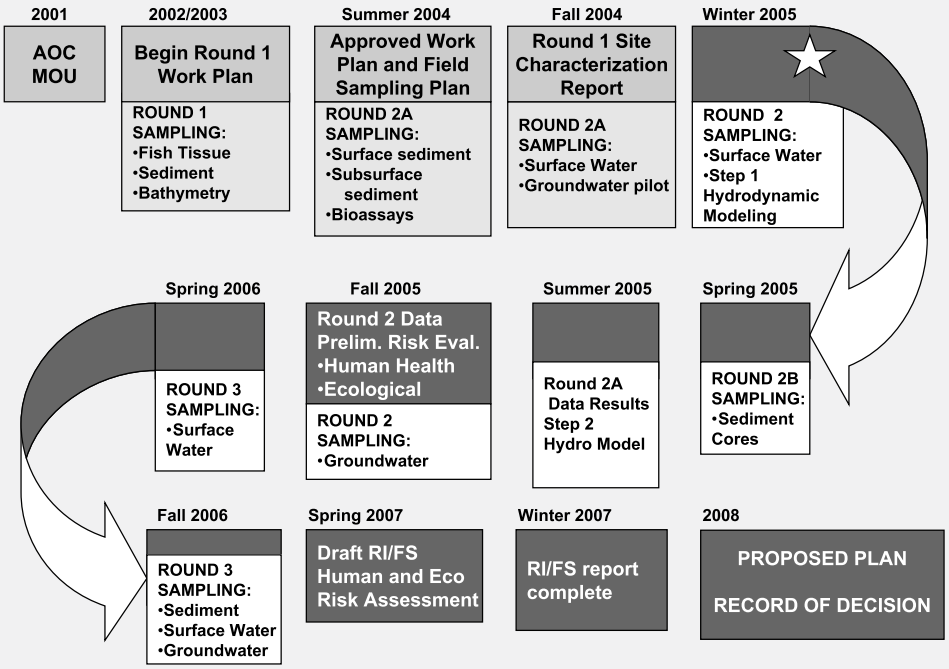
Portland Harbor was added to the EPA National Priorities List of contaminated sites in December 2000. Contamination in river sediments resulted from more than a century of industrial use along the river.

Sediments in the Willamette River are contaminated with many hazardous substances, including heavy metals like mercury, polychlorinated biphenyl (PCB), polynuclear aromatic hydrocarbons (PAH), dioxin/furans, and pesticides.

What Is Coming Up

May 11	Portland Harbor Community Advisory Group (CAG) Meeting
May-June	Public comment opportunity on Port of Portland Terminal 4 Early Action
May-June	Public comment opportunity on the GASCO Early Action
Late Spring	Public comment opportunity on the Source Control Strategy
June 8	Portland Harbor CAG Meeting
July 13	Portland Harbor CAG Meeting

Second Round Sampling Under Way



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On the Web at:
http://yosemite.epa.gov/R10/CLEANUP.NSF/sites/PtldHarbor and
http://www.deq.state.or.us/nwr/PortlandHarbor/ph.htm

Information repositories are located at the following Multnomah County libraries:

St. Johns Branch Library
Reference Desk
7510 N. Charleston Avenue

Northwest Branch Library
Reference Desk
2300 NW Thurman Street

Central Library Government Documents
Reference Desk
801 SW 10th Avenue

Alternative formats are available upon request by calling Judy Smith.